



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

09/873,310

06/05/2001

Louis Jacobus Botha

RONI006/00US

5709

23446

7590

04/20/2006

MCANDREWS HELD & MALLOY, LTD

500 WEST MADISON STREET

SUITE 3400

CHICAGO, IL 60661

EXAMINER

ABRAHAM, ESAW T

ART UNIT

PAPER NUMBER

2133

DATE MAILED: 04/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/873,310

Applicant(s)

BOTH, LOUIS JACOBUS

Examiner

Esaw T. Abraham

Art Unit

2133

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 June 2001.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-14 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 05 June 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 01/03 and 04/04.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Claims **1-14** are presented for examination.

ACKNOWLEDGEMENT OF REFERENCES CITED BY APPLICANT

IDS

2. As required by M.P.E.P. 609(c), the applicant's submission of the Information Disclosure Statement dated 01/07/03 and 04/12/04 are acknowledged by the examiner and the cited references have been considered in the examination of the claims now pending. As required by M.P.E.P. 609(c), a copy of the PTOL-1449 initialed and dated by the examiner is attached to the instant office action.

Drawings

3. The drawings are objected to as failing to comply with 37CFR 1.84(p) (5) because

a) The reference sign(s) mention in the description for figure 7 as "700" (see the disclosure page 8 paragraph 1038.

b) Figures 4A and 5 should be designated by a legend such as – **prior art** - (see page 3, of the disclosure paragraphs 1012 and 1014) in order to clarify what is applicant's invention. (see MPEP 608.02(g)).

A proposed drawing correction or corrected drawings are required in reply to the office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Art Unit: 2133

Corrected drawings sheets in compliance with 37 CFR 1.121(d) are required in reply to the office action should include all the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended". If a drawing figure is to be cancelled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheet may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header so as not to obstruct any portion of the drawing figures. If the changes are not acceptable by the examiner, the applicant will be notified and informed of any required corrective action in the next office action. The objection to the drawings will not be held in abeyance.

Specification

4. Please fill out the copending application number and filing date (see page 1 paragraph 1001).

REJECTIONS NOT BASED ON PRIOR ART

Claim Rejections - 35 USC § 112

112 indefinite

The following is a quotation of the second paragraph of 35 U. S. C 112

Art Unit: 2133

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

5. Claims 1-3, 5, 7, 9-11 and 13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a) Claims 1-3, 5, 7, 9-11 and 13 recite, "Cth bit". The phrase "Cth bit" is not defined by the claim. The examiner would appreciate if the applicant define and clarify this matter.

b) The phrase "the remaining bits" in claims (1, 5,6, 7, 9 and 13) is indefinite.

REJECTIONS BASED ON PRIOR ART

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere CO.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness

or nonobviousness.

6. Claims 1-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lucidarme et al. (U.S. PN: 6,675,016).

As per claims 1 and 9:

Lucidarme et al. substantially disclose a radio transmission system and a method of transmitting radio signals based on at least one data flow toward a radio communication station (see col. 1, lines 8-12). Lucidarme et al. in figure 3 teach a coding and multiplexing stage (18A) in the direction of transmission from the UTRAN (base station) to a UE (user equipment) (see col. 6, lines 22-30). Lucidarme et al. further in figure 3 teach an interleaving module (26) performs a permutation of the sequence delivered by a module (25) with a view to distributing the symbols pertaining to the TTI over the frames and this interleaving consists in writing the symbols of the sequence successively to the rows of a matrix, comprising columns, in permuting the columns of the matrix, and in then reading the symbols of the matrix column by column to form the sequence denoted, a module (27) then chops the sequence segments of consecutive symbols corresponding to the columns of the interleaving matrix after permutation, and respectively assigns these segments to the frames of the TTI to form a sequence denoted for each frame and each TrCH i (27) (see col. 7, lines 1-35). **It is noted however**; Lucidarme et al. **did not explicitly** teach means coupled to a memory buffer as recited in claims 1 and 9. **One ordinary** skill in the art at the time of the invention would have found it obvious to substitute the interleaving consists of writing (write/read) symbols of the sequence successively to the rows or column of matrix

Art Unit: 2133

(memory buffer) and reading (write/read) the symbols of the matrix column by column to form the sequence denoted with the claimed means coupled to a memory buffer. **This modification** would have been obvious because a person having ordinary skill in the art would have been motivated in order to minimize consumption of space processing power or resource consumption.

As per claims 2, 3, 10 and 11:

These claims are at least rejected for their dependencies, directly or indirectly, on the rejected claims 1 and 9 above. They are therefore rejected as set forth above. In addition, Lucidarme et al. teach an interleaving consists in writing symbols of the sequence to the rows of a matrix, comprising columns, in permuting the columns of the matrix, and in then reading the symbols of the matrix column by column to form the sequence denoted (see col. 7, lines 1-35).

As per claims 4 and 12:

The claims are at least rejected for their dependencies, directly or indirectly, on the rejected claims 1 and 9 above. It is therefore rejected as set forth above. In addition, Lucidarme et al. teach interleaving consists in writing the symbols of the sequence successively to the rows of a matrix, comprising columns, in permuting the columns of the matrix, and in then reading the symbols of the matrix column by column to form the sequence denoted, a module (27) then chops the sequence segments of consecutive symbols corresponding to the columns of the interleaving matrix after permutation, and respectively assigns these segments to the frames of the TTI to form a sequence denoted for each frame and each TrCH i (27) (forming output data frame) and a module

Art Unit: 2133

(27) then chops the sequence segments of consecutive symbols corresponding to the columns of the interleaving matrix after permutation, and respectively assigns these segments to the frames of the TTI to form a sequence denoted for each frame and each TrCH i (27) (see col. 7, lines 1-35).

As per claims 5 and 13:

Lucidarme et al. substantially disclose a radio transmission system and a method of transmitting radio signals based on at least one data flow toward a radio communication station (see col. 1, lines 8-12). Lucidarme et al. in figure 3 teach a coding and multiplexing stage (18A) in the direction of transmission from the UTRAN (base station) to a UE (user equipment) (see col. 6, lines 22-30). Lucidarme et al. further in figure 3 teach an interleaving module (26) performs a permutation of the sequence delivered by a module (25) with a view to distributing the symbols pertaining to the TTI over the frames and this interleaving consists in writing the symbols of the sequence successively to the rows of a matrix, comprising columns, in permuting the columns of the matrix, and in then reading the symbols of the matrix column by column to form the sequence denoted, a module (27) then chops the sequence segments of consecutive symbols corresponding to the columns of the interleaving matrix after permutation, and respectively assigns these segments to the frames of the TTI to form a sequence denoted for each frame and each TrCH i (27) (see col. 7, lines 1-35). **It is noted however**, Lucidarme et al. **did not explicitly** teach means coupled to a memory buffer as recited in claims 5 and 13. **One ordinary** skill in the art at the time of the invention would have found it obvious to substitute the interleaving consists of writing

Art Unit: 2133

(write/read) symbols of the sequence successively to the rows or column of matrix (memory buffer) and reading (write/read) the symbols of the matrix column by column to form the sequence denoted with the claimed means coupled to a memory buffer. **This modification** would have been obvious because a person having ordinary skill in the art would have been motivated in order to minimize consumption of space processing power or resource consumption.

As per claim 6:

Lucidarme et al. teach all the subject matter claimed in claims 1 and 9 including Lucidarme et al. in figure 2 disclose a medium access control layer (MAC) (17A) coupled to coding/multiplexing (18A) and the coding/MUX connected to a radio which the radio (19A, 19B) (see in figure 3) wherein the radio comprises modulator (46).

As per claim 7:

Lucidarme et al. substantially disclose a radio transmission system and a method of transmitting radio signals based on at least one data flow toward a radio communication station (see col. 1, lines 8-12). Lucidarme et al. in figure 3 teach a coding and multiplexing stage (18A) in the direction of transmission from the UTRAN (base station) to a UE (user equipment) (see col. 6, lines 22-30). Lucidarme et al. further in figure 3 teach an interleaving module (26) performs a permutation of the sequence delivered by a module (25) with a view to distributing the symbols pertaining to the TTI over the frames and this interleaving consists in writing the symbols of the sequence successively to the rows of a matrix, comprising columns, in permuting the columns of the matrix, and in then reading the symbols of the matrix column by column

Art Unit: 2133

to form the sequence denoted, a module (27) then chops the sequence segments of consecutive symbols corresponding to the columns of the interleaving matrix after permutation, and respectively assigns these segments to the frames of the TTI to form a sequence denoted for each frame and each TrCH i (27) (see col. 7, lines 1-35). **It is noted however**; Lucidarme et al. **did not explicitly** teach read/write unit coupled to a memory buffer as recited in claim 7. **One ordinary** skill in the art at the time of the invention would have found it obvious to substitute the interleaving consists of writing (write/read) symbols of the sequence successively to the rows or column of matrix (memory buffer) and reading (write/read) the symbols of the matrix column by column to form the sequence denoted with the claimed means coupled to a memory buffer. **This modification** would have been obvious because a person having ordinary skill in the art would have been motivated in order to minimize consumption of space processing power or resource consumption.

As per claims 8 and 14:

Lucidarme et al. teach all the subject matter claimed in claims 1 and 9 including Lucidarme et al. that the coding and multiplexing stage 18A is described with reference to FIG. 3 in the direction of transmission from the UTRAN to a UE. A similar structure is provided for the uplink (see specification 3G TS 25.212). Further, the characteristics of the transport format are supplied to the coding block (20) by the MAC stage (17A) and module (21) adding a cyclic redundancy checksum (CRC), serving to detect any transmission errors then concatenated and/or segmented by the module (22) to form blocks of appropriate size for the input of the channel coder (23) and rate matching

Art Unit: 2133

modules (24) delete (puncture) or discard or repeat bits of the sequences so as to match the bit rate of the TrCHs to the global bit rate (see col. 6, lines 10-53).

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US PN: 6,768,903 Fauconnier et al.

US PN: 7,012,911 Kasturi et al.

Status of Claims in the Application

The following is a summary of the treatment and status of all claims in the application as recommended by M.P.E.P. 707.07(i):

Claims rejected in the Application

Per the instant office action, claims 1-14 have received a first action on the merits and are subject of a **first action non-final**.

Direction of Future Correspondences

Any inquiry concerning this communication or earlier communication from the examiner

should be directed to Esaw Abraham whose telephone number is (571) 272-3812. The examiner

can normally be reached on M-F 8-5.

Important Note

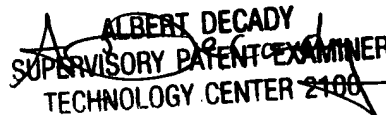
Art Unit: 2133

If attempts to reach the examiner by telephone are successful, the examiner's supervisor, Albert DeCady can be reached on (571) 272-3819. The fax phone numbers for the organization where this application or proceeding is assigned are (571) 273-8300 for regular communications and (571) 273-8300 for after final communications.

Information regarding the status of an Application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or PUBLIC PAIR. Status information for unpublished applications is available through Private Pair only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Esaw Abraham

Art unit: 2133


ALBERT DECADY
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100